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ABSTRACT

Instructional librarians in academic libraries continue to think critically about their function, methodology, and teaching effectiveness as they assist students in their quests for knowledge. While several factors identify effective teaching, one important component is teaching to the diversity of learning styles of the students. This paper examines David A. Kolb's theory of experiential styles of the students. This paper examines David A. Kolb's theory of experiential learning, which stresses the role of process in life-long learning. Kolb's theory has been used with success at North Park College in Chicago (Illinois) in the bibliographic instruction program, which focuses on both the process of finding information and on the evaluation of resources. In the multifaceted process of bibliographic instruction, meeting the various learning modes of students may be the key to improving teaching effectiveness and facilitating student learning. (Contains 14 references.) (Author/SLD)

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Learning Style Theory and Bibliographic Instruction: The Quest for Effective Bibliographic Instruction

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Abstract

Instructional librarians in academic libraries continue to think critically about their function, methodology and teaching effectiveness as they assist students in their quest for knowledge. While several factors identify effective teaching, one important component is teaching to the diversity of learning styles of the students. This paper examines David A. Kolb's theory of experiential learning. Kolb's theory has been used with success at North Park College in the bibliographic instruction program which focuses both on the process of finding information and on the evaluation of resources.

Those who have been involved with bibliographic instruction for some time have probably tried any number of methods, processes, formats and so forth to improve instruction and teach more effectively. Methods have very likely met with a diversity of responses from students. Some students are delighted with what they've learned, others think it a total waste of time. Furthermore, many librarians are trying to find means to teach effectively the use of CD-ROMs and on-line catalogs to traditional college students, to older adults, to students in newly approved graduate programs and to students from non-Western cultures.

In various studies of the characteristics that produce effective teaching, there is evidence that students value teachers from whom they have learned the most.[1] If one of the important components in education is student learning, then as librarians seek to improve effectiveness, they should study how students learn. "Learning styles" is a broad term that includes the cognitive, affective, and physiological dimensions of learning. Our cognitive style is how we perceive and process information: how we think. Our affective style is how we feel about and value our learning experiences; for example, one of our bibliographic instruction goals is to help students feel less intimidated using the library. Our physiological style involves the environment for effective learning: the time of day we learn best, the lighting and noise level we require, and the position of our bodies. While all components of learning styles are interesting and important to understand, this paper will have as its primary focus cognitive learning style.

Teachers generally teach according to their own style of learning.[2] There is some evidence that the larger the divergence between the student's learning and the teacher's teaching style, the lower the student's gain in achievement and the less positive the student's attitude toward the subject.[3] However, students who are good learners have learned to adapt to a variety of teaching and learning styles. Learning styles have nothing to do with intelligence, nor is any style better than any other; learning style is simply how each one of us learns best.

The goal in all bibliographic instruction programs is student learning. While knowledge of learning styles does not guarantee effectiveness in teaching, it can be a major component in facilitating learning. There are number of theories of learning;[4] however, David A. Kolb's theory of experiential learning[5] with significant success has worked fully in bibliographic instruction programs, primarily with freshman. Kolb's theory is especially attractive because of the emphasis on process rather than on outcome. His theory stresses the role of process in life-long learning, an important goal in bibliographic instruction. Kolb is an organizational psychologist at Case Western Reserve whose theory is specifically used in management, but has significant implications for education. The substance of Kolb's theory is illustrated by this circle. The metaphor of the circle is meaningful because not only is it a practical illustration, but it is a metaphor for the never-ending cycle of new learning.

At the top of the circle is CONCRETE EXPERIENCE. This is the first new experience in a learning situation in which students must be able to involve

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themselves fully, openly, and without bias in new and immediate experiences. An example of a concrete experience could be a literary text, a laboratory, a reading, an example, and an observation. In a bibliographic instruction presentation, this could be the worksheet or instruction booklet, or the terminal. REFLECTIVE OBSERVATION is the stage when students must be able to reflect, observe, and interpret new data. In North Park's freshman bibliographic instruction program, students are required to meet individually for a fifteen minute conference with one of the instructional librarians to give them an opportunity to ask questions and to reflect on what they've done so far. Students are involved with reflective observation in discussion, brainstorming, journaling, and answering thought and rhetorical questions. At this stage, students need to discuss how the CD-ROM and on-line technology are similar to and different from the printed indexes and card catalog. ABSTRACT CONCEPTUALIZATION involves synthesis and analysis, the integration of the concrete experience after reflective observation into new theories. Students are involved with abstract conceptualization in lectures, papers, projects, and analogies. At this stage students plan their search strategy. The fourth and final stage of the circle is ACTIVE EXPERIMENTATION in which students solve problems and make decisions. This is the stage of actually doing the assignment which then leads to another experience to build on the circle of learning. Certain activities can support more than one phase of the circle depending on the instructor's objectives.

There are two dimensions of the learning task. The vertical dimension (Concrete Experience to Abstract Conceptualization) represents the infusion of information either from experience or from abstractions. Those who learn best through concrete experience learn better with the less symbolic such as a prose text rather than poetry, or the Gospels rather than the Book of Revelation. Those who learn best through abstract conceptualization enjoy analyzing concepts and working with theories. They enjoy mathematics, poetry and the Book of Revelation.

The horizontal dimension (Reflective Observation to Active Experimentation) refers to the processing of information by either internally reflecting on the experience or by externally acting upon the conclusions that have been drawn. Those who prefer reflective observation are observers and tend to need time to think about answers to questions. Those who prefer active experimentation are actors and tend to be the first with their hands up to answer questions, often not caring whether or not they are right. Four action verbs describe the learners at each step. Concrete Experience becomes experiencing; Reflective Observation becomes examining; Abstract Conceptualization becomes explaining; and Active Experimentation becomes applying.[6]

When the ways information is perceived are combined with the ways information is processed, the circle divides into quadrants, each of which is a particular learning style. Those who learn best through a combination of Concrete Experience and Reflective Observation are DIVERGERS. They are imaginative people with one thought stimulating another. They look at alternative ideas and need background information in reaching decisions. They love discussion and brainstorming and are especially interested in people. They tend to be in the Humanities and the Social Sciences. Doing a bibliographic instruction presentation in a class in English, philosophy, religion and so forth, the instruction librarian following Kolb's service would want to be sure to provide opportunities for discussion and for alternate search strategies. Students should chose their topic prior to the bibliographic instruction session so that they have time to reflect on their topic and have time to think of their questions and responses.

The opposite of DIVERGERS is CONVERGERS, those who learn best through a combination of Active Experimentation and Abstract Conceptualization. CONVERGERS learn best through lectures rather than by discussion. They learn through analysis and are swift to make decisions. They look for connections, ways to tie things together rather than looking for divergent ideas. Their greatest strength is their practical application of ideas. They prefer dealing with things rather than people, and like a general analytic detachment. Engineers tend to be in this quadrant. Doing bibliographic instruction with these students would be primarily lecture and showing them the details of a search strategy. They will learn readily the fine points of using CD-ROMs and on-line databases.

ASSIMILATORS are those who learn best through a combination of Reflective Observation and Abstract Conceptualization. These learners can plan and formulate theories, but they are not as interested in the practical application of theory as they are in a theory that is logically sound and precise. In fact, they will

change facts to fit the theory. They solve problems through analysis, and learn well as they plan and formulate their search strategies. These students might be in the sciences and mathematics. Presenting bibliographic instruction to science classes needs to involve each student in planning his or her own strategy after the process of a search strategy is explained.

Finally, those who learn best through a combination of Active Experimentation and Concrete Experience are called ACCOMMODATORS and they are the opposite of ASSIMILATORS. These are people who learn best by doing things. They are accomplishment and goal-oriented, but they need frequent feed-back to keep on task. Their strengths are advocating positions and implementing decisions. Unlike the Assimilators, they will change the theory to fit the facts, and they solve problems through intuition rather than through analysis. These students will learn best when they are actually doing the assignment. Accommodators are generally found in social professions such as business, marketing, sales, accounting and politics. The focus of a bibliographic instruction presentation in a business class needs to be on the assignment they will be doing and needs to give them whatever hands-on experience with CD-ROMS and other technology is appropriate. They need to be shown concrete things such as *Business Periodicals Index*, *Value-Line*, and so forth.

In all bibliographic instruction presentations, the entire circle of learning needs to be presented, but the focus should be on the learning style that seems appropriate for a particular class. However, assumptions should never be made that everyone in a class learns the same way and therefore the differences need to be accommodated.

There are two further divisions in Kolb's circle. Those above the processing line, Accommodators and Divergers, are called LUMPERS. These students need to see the whole picture before they can learn the details and facts. Regardless of the discipline in which the bibliographic instruction is being presented, with an overview of what will be covered during the class, is always used assuming the presence of at least one Lumper. Those who are below the processing line, Convergers and Assimilators, are called SPLITTERS. These students need to analyze the parts before they can learn the concept as a whole. Assuming there is at least one Splitter in any class, I always try to have logically organized details for them.

Bibliographic instruction is a multifaceted process involving a complex relationship between librarian, content, and student. Meeting the various learning modes of students may be the key to improving teaching effectiveness and facilitating learning among students.

Endnotes

1. Peter A. Cohen, "Student Ratings of Instruction and Student Achievement: A Meta-Analysis of Multisection Validity Studies," *Review of Educational Research* 51 (Fall, 1981): 281-309; Wilbert J. McKeachie, "Student Ratings of Faculty: A Reprise," *Academe* 57 (October, 1971): 384-97.
2. For a study of applying David A. Kolb's theory of learning styles of librarians, see Jin M. Choi, "Learning Styles of Academic Libraries," in *College & Research Libraries* 50 (November, 1989): 691-99.
3. George Domino, "Interactive Effects of Achievement Orientation and Teaching Styles on Academic Achievement," *Journal of Educational Psychology* 62 (October, 1971): 427-31.
4. Several of the major current learning style theories are described in the following sources: H. A. Witkin, "Field-Dependent and Field-Independent Cognitive Styles and Their Educational Implications," *Review of Educational Research* 47 (Winter, 1977): 1-64; Mary Jane Even, "Adapting Cognitive Style Theory in Practice," *Lifelong Learning: The Adult Years* 5 (January, 1982): 14-27; James W. Keefe, ed., *Profiling and Utilizing Learning Style* (Reston, Va.: NASSP, 1988), p.2-37; Pat Burke Guild and Stephen Garger, *Marching to Different Drummers* (Alexandria, Va.: ASCD, 1985); Ronald Hyman and Barbara Rostoff, "Matching Learning and Teaching Styles: The Jug and What's In It," *Theory Into Practice* 23 (Winter, 1984): 35-43; Rita Dunn, "Learning Style Researchers Define Differences Differently," *Educational Leadership* 38 (February, 1981): 372-75; and Charles S. Claxton and Patricia H. Murrell, *Learning Styles: Implications for Improving Educational Practices* (Bethesda, Md.: ERIC Document Reproduction Service, 1987), ED 293 476.
5. David A. Kolb, *Experiential Learning: Experience As the Source of Learning and Development* (Englewood Cliffs, N.J.: Prentice-Hall, 1984); Barbara Carlsson, "R & D Organizations as Learning Systems," in David A. Kolb, *Organizational Psychology: A Book of Readings*, 3rd ed.

(Englewood Cliffs, N.J.: Prentice-Hall, 1979), p. 36-46; Charles S. Claxton, op. cit., Ibid., and Pat Burke Guild, op. cit.

6. Marilla D. Svinick and Nancy M. Dixon, "The Kolb Model Modified for Classroom Activities," *College Teaching* 35 (Fall, 1987): 14-46.